

## Cetaceans in the Northern Adriatic Sea : past, present and future

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The regular cetacean fauna of the Northern Adriatic Sea, currently represented by a single dolphin species, the bottlenose dolphin (*Tursiops truncatus*), is notably reduced with respect to the Mediterranean Sea, where the number of cetacean species regularly occurring is already reduced in comparison to most Atlantic regions (NOTARBARTOLO DI SCIARA, 1992).

By contrast, a review of the scientific literature reveals that, in addition to bottlenose dolphins (GIGLIOLI, 1880; TROIS, 1894; NINNI, 1901; VATOVA, 1932; DULIC and TORTIC, 1960; PILLERI and GIHR, 1977), the cetacean fauna of the Northern Adriatic Sea is composed by a greater number of species, including: a) deep water cetaceans such as fin whales, *Balaenoptera physalus* (CAPELLINI, 1877; TROIS, 1894; NINNI, 1901; DULIC and TORTIC, 1960; PILLERI and GIHR, 1977), sperm whales, *Physeter catodon* (NARDO, 1853; TROIS, 1894; NINNI, 1901; DULIC and TORTIC, 1960), false killer whales, *Pseudorca crassidens* (NOTARBARTOLO DI SCIARA, 1992), pilot whales, *Globicephala melas* (HIRTZ, 1922; DULIC and TORTIC, 1960), Risso's dolphins, *Grampus griseus* (GIGLIOLI, 1880; TROIS, 1894; VALLE, 1900; NINNI, 1901; DULIC and TORTIC, 1960) and common dolphins, *Delphinus delphis* (NARDO, 1853; TROIS, 1894; NINNI, 1901; VATOVA, 1932; DULIC and TORTIC, 1960; PILLERI and GIHR, 1977); and b) species now known or presumed to have been misidentified, such as blue whales, *Balaenoptera musculus* (DULIC and TORTIC, 1960), minke whales, *B. acutorostrata* (RALLO, 1979), white-beaked dolphins, *Lagenorhynchus albirostris* (DATHE, 1972), and harbour porpoises, *Phocoena phocoena* (NARDO, 1853; RALLO, 1979). In addition, striped dolphins (*Stenella coeruleoalba*), which have recently become the commonest pelagic cetaceans throughout the Mediterranean, occasionally stray into the area and stand along the Italian shores (CENTRO STUDI CETACEI, 1990).

A critical analysis of all these reports, however, suggests that the occurrence of most of these deep-water species must be considered an exceptional event in the Northern Adriatic Sea. Until recently only two cetaceans were regularly seen in this region: the common dolphin and the bottlenose dolphin (VATOVA, 1932; PILLERI and GIHR, 1977). In the past decade, however, unknown reasons caused common dolphins to almost completely disappear from all the seas surrounding the Italian peninsula and islands, including the Northern Adriatic (NOTARBARTOLO DI SCIARA, 1992), leaving bottlenose dolphins the sole cetacean species resident in the area (NOTARBARTOLO DI SCIARA *et al.*, 1990).

A sighting of a group of four adult common dolphins, made by us in the waters adjacent to the island Losinj (44° 33' N, 014° 30' E) on 2 August 1991, was therefore rather surprising.

The low cetacean diversity of the Northern Adriatic Sea certainly reflects the peculiar environmental conditions of this region (shallowness and extreme ranges of physical-chemical properties), which also correspond to the habitat requirements of bottlenose dolphins, but might also be influenced by the negative effects of human activities. Are cetaceans going to disappear entirely from this part of the Mediterranean? Reports exist concerning the general unhealthy condition of bottlenose dolphins found on the Italian side of the Adriatic (GREENWOOD and TAYLOR, 1978), although recent field studies on the Croatian side point to the opposite (BEARZI *et al.*, in press). Dolphins are long-lived top predators, and as such are excellent bioaccumulators of xenobiotic, potentially noxious substances. A monitoring of bottlenose dolphin populations trends and ecology in this region is thus important not only to enhance our understanding of the general ecological mechanisms regulating this delicate marine environment, but also for the conservation of the last existing cetacean in the Northern Adriatic Sea.

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